

**REMARKS**

The examiner is thanked for a thorough examination of the present patent application.

Claims 1-23 are pending with Claims 1, 12, and 17 being Independent Claim. Claims 1, 12, and 17 are currently amended.

In this document, the term “applicant” indicates and includes both singular “applicant” and plural “applicants.”

I. REJECTIONS UNDER 35 USC 102(b)

Claim 1 was rejected under 35 U.S.C. 102(b) as being anticipated by Kobachi et. al. (US 6,326,948). Final Action, p. 2. The applicant respectfully traverses the rejection. Nonetheless, the applicant currently amends, without prejudice, Claim 1 to recite the present invention with even more clarity.

“A claim is anticipated only if **each and every element** as set forth in the claim is found ... in a single prior art reference.” *Verdegall Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, USQP2D 1051 (Fed. Cir. 1987) (Emphasis added). In fact, for a valid rejection under 35 U.S.C. 102(b), “[t]he **identical invention** must be shown in as **complete detail** as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913 (Fed. Cir. 1989) (Emphasis added). Moreover, “**All words** in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494 (CCPA 1970) (Emphasis added).

Further, “it is fundamental that **claims are to be construed in light of the specifications** and both are to be read with a view to ascertaining the invention.” E.g., *Adams v. United States*, 383 U.S. 39, 49 (1966). “**Where an explicit definition is**

**provided by the applicant for a term, that definition will control interpretation** of the term as it is used in the claim.” MPEP 2106 citing *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999) (meaning of words used in a claim is not construed in a “lexicographic vacuum, but in the context of the specification and drawings.”); see, also, *In re Vogel*, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970).

Here, Claim 1, currently amended, recites, *inter alia*, “wherein said sensor is adapted to take successive images of the active surface of said captive disc.” As discussed in the Specification, the apparatus of the present invention determines movement of the captive disc by taking successive images using the sensor 24 (of Figure 2B), then comparing the images mathematically to determine the magnitude and the direction of motion in the X and Y axis.

In contrast, the Kobachi reference teaches an apparatus that detects relative amount of reflected light received by four photodiodes PD1 to PD4 (placed in four quadrants) compared to reflected light received by four photodiodes PD1 to PD4 at some “initial state.” See, Kobachi, Figures 7A, 7B, 8, and 10; and Kobachi, Column 9. That is, in the Kobachi reference, no image of the captive disc is taken.

In contrast, the present invention discloses an apparatus that takes successive images and compares the images, not light levels. This design has a number of advantages over the apparatus of the Kobachi invention. For example, in the Kobachi invention, its light source (light emitting diode LD, of Figure 3 of Kobachi) must be located in its center, between its four photodiodes PD1 to PD4, and facing or projecting toward its reflective plate 3. Further, its light emitting diode LD must have sufficient intensity. In contrast, the light source 38 of the present invention may be located at any location and at any angle within the cavity defined by its frame 32 within its springs 28 and 30.

Further, efficiency of the Kobachi invention is susceptible to physical drift of the position and spot size of the light, and requires tight control of the light spot size and position. In contrast, the present invention is relatively less sensitive to such drift.

In addition, the Kobachi invention is sensitive to contamination. Any foreign matter come between its operating portion 1 and its sensor 3 is likely to be interpreted as unintended movement of the operating portion 1. In contrast, the present invention is relatively less sensitive to such contamination because, in the present invention, only the differences between subsequent images are used to determine movement.

Claims 2–6 and 8–11 were rejected under 35 U.S.C. 102(b) as being anticipated by the Kobachi reference. Final Action, p. 2. The applicant respectfully traverses the rejection. Claims 2–6 and 8–11 depend, directly or ultimately, from Independent Claim 1, currently amended. As discussed above, Claim 1, currently amended, is not anticipated by the cited prior art reference. Accordingly, the applicant respectfully submits that Claims 2–6 and 8–11 are allowable for at least the same reasons for which Claim 1 is allowable. See, e.g., *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Please note that Claims 2 and 3 are currently amended, without prejudice, to be consistent with the amendments of Claim 1.

Independent Claim 17 was rejected under 35 USC 102(1) as being anticipated by the Kobachi reference. The applicant respectfully traverses. Independent Claim 17, currently amended, recites the present invention having a different scope than that of Independent Claim 1, currently amended, but having similar limitations as Claim 1. Additionally, Claim 17 is currently amended in a similar manner as Claim 1. Accordingly, the applicant respectfully submits that Claim 17, currently amended, is allowable for at least the same reasons for which Claims 1, currently amended, is allowable as discussed above.

Claims 18–21 and 23 were rejected under 35 U.S.C. 102(b) as being anticipated by the Kobachi reference. Final Action, p. 2. The applicant respectfully traverses the rejection. Claims 18–21 and 23 depend, directly or ultimately, from Independent Claim 17, currently amended. As discussed above, Claim 17, currently amended, is not anticipated by the cited prior art reference. Accordingly, the applicant respectfully submits that Claims

18–21 and 23 are allowable for at least the same reasons for which Claim 17 is allowable. See, e.g., *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Please note that Claims 18 and 19 are currently amended, without prejudice, to be consistent with the amendments of Claim 1.

## II. REJECTIONS OF CLAIMS UNDER 35 USC 103(a)

Claim 7 was rejected under 35 USC 103(a) as being unpatentable over the Kobachi reference in view of Liao (US 2004/0075640). Final Action, p. 7 et seq. The applicant respectfully traverses.

For a valid rejection under 35 U.S.C. 103(a), “[t]he **examiner bears the initial burden** of factually supporting any *prima facie* conclusion of obviousness.” MPEP Ed. 8 Rev. 2, Sec. 2142 (italic in the original; bold added). “The PTO bears the burden of establishing a case of *prima facie* obviousness.” *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993); *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966),

“To establish a *prima facie* case of obviousness, three basic criteria must be met. **First**, there **must** be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. **Second**, there **must** be a reasonable expectation of success. **Finally**, the prior art reference (or references when combined) **must** teach or suggest all the claim limitations.” MPEP Ed. 8 Rev. 2, Sec. 2142 (italic in the original; bold added), citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Further, “[t]he teaching or suggestion to make the claimed combination and the reasonable expectation of success **must both be found in the prior art**, and not based on applicant’s disclosure.” *Id.* (bold added). In fact, “The mere fact that reference **can** be combined or modified does not render the resultant combination obvious **unless the prior**

**art also suggests** the desirability of the combination.” MPEP Ed. 8 Rev. 2, Sec. 2143.01 (underline in the original, bold added), citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Again, there must be a suggestion or motivation **in the reference** to do so.” *In re Mills*, 916 F.2d at 682, 16 USPQ2d at 1432 (emphasis added).

Claim 7 depends from Claim 2 which, in turn, depends from Independent Claim 1, currently amended. The applicant respectfully submits that Claim 7 is allowable over the cited prior art references. Even if combined, the cited prior art references do not and cannot render Claim 7 obvious. This is because, for example, even if combined, the cited prior art references do not teach the vertical spring recited by Claim 7 as explained above related to Claim 1. For at least this reason, the applicant respectfully submits that Claim 7 is allowable over the cited prior art references.

Claim 12 was rejected under 35 USC 103(a) as being unpatentable over the Kobachi reference in view of the Liao reference. Final Action, p. 7 et seq. The applicant respectfully traverses.

Independent Claim 12, currently amended, recites the present invention having a different scope than that of Claim 7, but having similar limitations as Claim 7 which depends, ultimately, from Claim 1, currently amended. Additionally, Claim 12 is currently amended in a similar manner as Claim 1. Accordingly, the applicant respectfully submits that Claim 12, currently amended, is allowable for at least the same reasons for which Claims 1 and 7 are allowable as discussed above.

Claims 13–16 were rejected under 35 USC 103(a) as being unpatentable over the Kobachi reference in view of the Liao reference. Final Action, p. 6 et seq. The applicant respectfully traverses. Claims 13–16 depend, directly or ultimately, from Independent Claim 12, currently amended. As discussed above, Claim 12, currently amended, is not anticipated by the cited prior art references. Accordingly, the applicant respectfully submits that Claims 13–16 are allowable for at least the same reasons for which Claim 12 is allowable. See, e.g., *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Please

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note that Claim 13 is currently amended, without prejudice, to be consistent with the amendments of Claim 12.

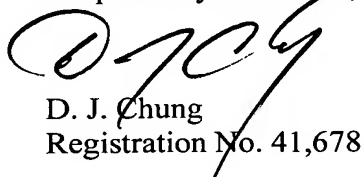
### III. PRIOR ART MADE OF RECORD BUT NOTE RELIED UPON

The applicant respectfully submits that the prior art references made of record and not relied upon by the Final Action, alone or in any combination, do not prevent allowance of the Claims.

### CONCLUSION

In view of the foregoing Amendments and Remarks, the applicant respectfully submits that the entire application is in condition for allowance. The applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



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